

JAPANESE MEDICAL MATERIAL

I-285

LANGELA; ISZILIN; FISCHLIN; FISELIN
(Insulin Injections)

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17 May 1946

MEDICAL ANALYSIS SECTION
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17 May 1946.

LANGELA; ISZILIN; FISCHLIN; FISELIN
(Insulin Injections)

SOURCE: Tokyo, Japan.

IMPORTANCE: Not previously reported. A solution of the anti-diabetic principle obtained from fish. No identical product obtained from a fish source is listed in standard American references.

DESCRIPTION:

Langela: Five 1 cc. ampoules of clear glass are enclosed in a cardboard box. A brown precipitate is evident and the solution appears to be discolored.

Iszilin: Four 1 cc. ampoules of clear glass are enclosed in a cardboard box. The solution is clear and colorless.

Fischlin: One 5 cc. vial of clear glass is enclosed in a cardboard container. The solution is colorless and slightly hazy.

Fiselin: One 5 cc. vial of clear glass is enclosed in a cardboard container. The solution is turbid and a brown sediment is present.

SUMMARY OF GENERAL INFORMATION:

All the preparations are aqueous solutions of the anti-diabetic principles extracted from the Islands of Langerhans of the pancreas of fish. Fischlin and Fiselin are obtained from fish of genus, TELEOSTEI.

They are available in the following sizes and strengths:

	<u>SIZE</u>	<u>UNIT STRENGTH</u>
LANGELA	5 X 1 cc.	10 units per 1 cc.
ISZILIN	5 X 1 cc.	10 units per 1 cc.
	10 X 1 cc.	10 units per 1 cc.
	50 X 1 cc.	10 units per 1 cc.
FISCHLIN	1 X 1 cc.	10 units per 1 cc.
	1 X 5 cc.	10 units per 1 cc.
	1 X 1 cc.	20 units per 1 cc.
	1 X 5 cc.	20 units per 1 cc.
	1 X 1 cc.	100 units per 1 cc.
	1 X 5 cc.	100 units per 1 cc.
FISELIN	1 X 5 cc.	10 units per 1 cc.
	1 X 5 cc.	20 units per 1 cc.

In all the products, except Langela, the unit is by definition the equivalent of the international unit.

Translations of the literature enclosed with each preparation are part of this report and generally include the product's physiological action, indications, dosage, directions for use, caution, packaging, storage, and manufacturer.

Results of comparative tests between these insulin injections obtained from fish and those manufactured in the United States from mammalian pancreas are not recorded. While the use of fish pancreas for anti-diabetic

preparations represents an attempt to utilize the natural resources of Japan, the source for such products is novel insofar as available references are concerned. Evaluation should be made by experts on insulin in the United States of America.

PHOTOGRAPHS:

Figure 1 - Closed packages

Langela - Iszilin - Fischlin - Fiselin

Figure 2 - Open packages

Langela - Iszilin - Fischlin - Fiselin

Figure 3 - Literature on Langela

Figure 4 - Literature of Iszilin

Figure 5 - Literature of Fischlin

Figure 6 - Literature on Fiselin



海洋魚族より抽出せるインシュリン

ランゲラ LANGELA

“インシュリン大邦”

本品ハ游泳魚族ノランゲルハンス氏島ホルモンノ水溶液ニシテ無色透明
PH 113ノ微酸性反應ヲ呈ス。

主作用ハ血液内糖量ヲ低下セシムルニアリ。本剤ノ血糖下降作用ハ略
々十単位ノ注射ニヨリ直チニ三〇一八〇%ノ下降ヲ認メ三時後ニ於テ
モ尙二〇一八〇%ノ下降ヲ持續ス。

尚右主作用ノ外植物神經系ト密接ナル關係ヲ有シ。特ニ副交感神經系
ヲ刺戟興奮セシム。更ニ腺臓器ノ分泌亢々汗、乳汁、胃液、唾液其
他消化液ノ分泌ヲ増加セシム。

適應症 糖尿病・マリヤ・早發性痴呆等ノショック療法・結核ノ
肥胖療法。

用 量 糖尿病患者ノ血液又ハ尿中ノ糖量ニ應じ本剤ノ用量ヲ増減
シ食餌療法ト併用ス。本剤ノ一単位ハ約二十五Gノ血糖量
ニ相當ス。結核肥胖療法或ハ食思増進ノ目的ヲ以ツテスル
時ハ二十五単位ヲ一回量トシテ一日一回之ヲ注射シ次第ニ
增量スル。尚本剤ヲ葡萄糖溶液ト併用スル場合アリ、コノ
場合ハ通常葡萄糖三十四Gニツキ本剤ヲ一単位トス。

用 法 主トシテ皮下ニ注射シ、皮内、筋肉内ヲ避ケベシ。注射ハ
同一ノ局所ニ反覆スペカラズ。注射器ハ絶對ニアルカリヲ
避ケ、蒸溜水又ハ軟水ヲ用ヒテ煮沸滅菌ヲ行フベシ。冷暗
所ニ貯フベシ。

包 塗 一〇単位一〇五管入

大阪市浪速區新川二丁目六八一

製造發賣元 大邦藥商株式會社

イスジリン「シミズ」

Iszilin "Simizu"

イスジリンは魚類の脾臓より抽出精製せる脾臓ランゲンス氏島ホルモンたるインスリリンの減菌水溶液にして、最も生理性試験を行ひその力値を國際単位を以て示す。即ち各々その標記単位は本剤一ccの有する國際単位なり。即ち各々その標記単位は本剤一ccの有する國際単位なり。

脳膜界に使用せられつゝあるホルモン製剤中インスリリンにして、くべからざる利用性に就いては異言を要せざる所低血糖作用物質の發見抽出と之が臨牀的に使用し得られる所があるが然しそれ以前に二五〇年間の真剣なる多數の研究に關する生理學的研究が行はれ、解して發見の因となりたる事は忘れ得ざる所なり。

【イスジリンの生理的作用】

イスジリンは優秀なるインスリリン製剤にして從來研究されたるインスリリンの生理的作用と同一にして今その作用要約を掲ぐるに次の如し。

- 一、糖尿病患者、脾臓剔出犬の過血糖を常態血糖に下げる。
- 二、降せしめ得る。
- 三、常態にある人及動物の血糖を低下せしむ。
- 四、糖尿病に於ける影響として血糖の下降、脂肪代謝の進行、肝臓筋肉内の含水炭素貯蔵作用、血中尿中のカルシウムの増加と無機磷の減少等が挙げられる。
- 五、麻酔剤、エビレナミン、窒息、脳下垂體前葉及後葉抽出物等による血糖上昇に対する拮抗作用を有す。
- 六、標準血糖の肝調節作用及クリコゲン貯藏作用。

【臨牀的應用】

イスジリンは次の如く糖尿病治療の他各種の疾患にインスリリン療法として使用せらる。

糖尿病の本態並に治療経験によりホルモン療法と同時に食事療法を必要とする。食事と糖尿病との關係は特に果言せざるもの各個人の必要カロリーを満足せしめ蛋白質は成人少飼料二三五、小兒にありては二三四五その他ビタミン、礦物質を與へ含水炭素を減量して糖尿病を調節しその上にイスジリンを使用する様勉むべきなり。

ISZILIN "Simizu"

Insulin Preparation

Iszilin is a sterile solution of insulin extracted from the Langerhans' islands of fish pancreas. It is standardized biologically in the International Unit.

Indications and Dosage

Diabetes:
Dose for diabetes should be determined according to symptoms. When sugar amount in the urine is ascertained, begin with the initial dose of 1 unit per 2.3 gm. of urinary sugar, and gradually increase the dose as required. It is generally administered hypodermically, but intravenously in case of diabetic coma complicated with dyspnea.

Dementia Praecox:

40-200 units should be given at once so as to cause insulin shock, which cures Dementia Praecox. Repeat the administration 20-30 times as the conditions require it. Weir Mitchell Treatment: Take a small dose (1-5 units) daily for this treatment and also for the promotion of appetite. If necessary, increase the dose with caution.

Packing

5. 10. 50. Ampoules of 1 cc
(1 cc = 10 I.U.)

Manufactured by
Simizu Seiyaku & Co., Ltd.
SIMIZU, JAPAN.

Distributed by
TAKEDA YAKUHIN KOGOKABUSHIKIWA
OSAKA, JAPAN.

糖尿病治療の際のイスジリンの使用量は概ね症状の程度食事の條件等によりて決定すべきも、尿中の糖量よりイスジリンと其與する場合は排泄糖量二二三五に對しイスジリン一單位を以て開始し、必要に應じて單位を増加す。

投與法は一般に皮下に注射するも糖尿病昏睡の際呼吸障礙ある場合には靜脈内に注射す。

精神乖離症

精神乖離症所謂早癡性躁呆症に使用し、その低血糖ショック作用によりて之が覚解を計る療法は頗るその應用を深めた。

勿論その效果は患者の發病後の経過期間或はその感受性によるもの概ね發病後長く経過せざるもの程覚解率大なり。

使用量は充分なるショックを喚起する爲には一回四〇単位一二〇単位を注射し必要に應じて一二〇三〇回反復す。

肥胖療法

肥胖療法或は食欲抑制の目的には低単位（一五単位）を一日一回注射し、必要に應じ注意して漸次增量す。葡萄糖を併用するも可なり。

低血糖症

低血糖症

過量のイスジリン注射によりて或は又注射時の空腹時或は持異體質により甚だしく血糖降下し低血糖症狀を惹起する事あり、勿論精神乖離症の治療は本作用の應用なるも、激候は版、力感、機械感、發汗、眩暈、複視等にして眞に意識混濁、異常興奮、昏睡に到る。斯る場合は輸分（ロデノン注射、砂糖類）を與入れば可なるも危険なる場合は五一〇%ロデノンを皮下又は静脈内に注射し或は胃内に糖類を注入す。常に低血糖症に注意するを要す。

一、注射は主として皮下に注射するも同一個所に反復注射するを避くべし。即ち同一個所に反復注射する時はイスジリンの吸收を障礙する如き組織の變化を

一、参考が放り。

一、注射器は絶対にアルカリを避け蒸溜水又は軟水を用ひ煮沸滅菌を行ふべし。

包 製 C-100 10単位 五管入 一〇管入 五〇管入

製造販賣元 三井木町新地町 水清製藥株式會社

販賣總代理店 大阪府大阪市北区北新町二丁目二七番 武田藥品工業株式會社

劇 糖尿病治療 肥胖症治療 脂肪ランゲルハンス氏島ホルモン

(登録商標)

フィシュリン 「日研」

FISCHLIN "nikken"

フィシュリンは、硬骨魚類の胰臓より分離せる、ランゲルハンス氏島より抽出精製せるインシュリン含有の滅菌水溶液なり。

フィシュリンの單位

既往なる生理試験を行ひ、一cc中の力値を國際単位を以て表示せり。

フィシュリンの糖尿病患者の血糖を減少せしめる作用は、病症の輕重如何に依り異れども、一単位は略攝取せる含水炭素の一六五瓦を同化す。

適用及用量

フィシュリンは、不快なる副作用なき製品にして、次の如き諸症に適用せらる。

使用に際しては、常に低血糖症状に注意し、皮下又は靜脈内に注射す。

経口的に與ふる事は、消化液に依り無効とせらるゝを以て意義なし。

糖尿病適用

患者の血液又は尿中の糖量に應じ用量を増減し、食餌療法を考慮し、食前十五分三十方に一日一回三回注射す。

非糖尿病適用

一般肥脛症法、特に結核肥脛症法、食欲増進の目的には約二十五単位を一回量とし、一日一回注射し、注射後必ず多量の含水炭素を與ふべし。

精神分離症にては低血糖症状を起す迄二〇—二〇単位を注射す。

低血糖症狀

フィシュリンの注射が過量なる時或は餘りに空腹時及特異體質なる場合、血糖量の著しき減少を來し、所謂低血糖症状を惹起する事あり。此の徵候には先づ脱力・頭暈・苦悶感を覚え、次で發汗し、甚しき時は眩暈複視を起し、更に進めば意識溷濁異状興奮昏睡等に陥る。以上の場合には、糖分を與ふれば數分時にして恢復するを常とす。昏睡を起し、又は危険を感じる場合には、糖分水溶液を胃カチーフルにて與ふるか、或は五一—一〇%葡萄糖溶液を皮下又は靜脈内に注射すべし。又高度の心臓障害なきときは千倍鹽酸エビレナミン溶液〇三—〇.七ccを皮下注射したる後、糖分を與ふるも可なり。

注意

1 フィシュリンは、主として皮下に注射し、皮内或は筋肉内を避け、同一局所に反覆すべからず。

2 常に低血糖症状に注意すべし。

3 注射器の消毒には、絶対にアルカリを含まざる蒸溜水又は軟水を用ひ煮沸滅菌を行ふべし。アルカリ性に於ては効力を減弱せられ、甚しき時は無効とせらるゝを以てなり。

4 注射液の採り方は、次の如く扱はざる時は容器内の滅菌液を汚染せしむるを以て注意すべし。

ゴム帽に手を觸るゝ事なく、五%石炭酸水、ヨード丁幾、アルコール等にてゴム帽を拭ひ、新に消毒したる注射器に必要量と等しき空氣を吸引したる後、針先をゴム帽の中心より垂直に突き刺し瓶に入れ、次に容器を倒さにして空氣を瓶中に放出し、液を吸引すべし。

貯藏法

冷暗所に貯べし。

包装

注射液一cc 一〇単位五cc 五〇単位八

注射液一cc 一二〇単位五cc 一〇〇単位八

注射液一cc 一〇〇単位五cc 五〇単位八



東京市王子區浮間町一六〇八番地
製造發賣元合資會社 日本科學研究所

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振替東京一六九五四七番

魚の国产インシュリン

フィゼリソ (英語版) FISELIN

「フィゼリソ」は「胰島液のラングミンス氏島より抽出せる有効成分の水溶液にして」これを術語生物学上に注記すれば「胰島液の不足を補ひ、含水要素の利用を正常ならしめ得べし。直に那製造過程中の運びるものなる。

過感症

「フィゼリソ」は糖尿病を以て第一過感症となする近来其の應用範例は極めて多く、其の二、三を列挙すれば見その如し。

叶酸疾患（貧血、急性葉酸疾患）中等に於く所感性時）透析（葡萄糖との併用療法）配管膜、燒傷及皮膚癌（癌細胞）に於て、糖尿病患者に對しては呼吸器は細胞の急増を來すことがあるので於て研究して之を行ふに、（本他セビド）氏病（癌細胞）後脚部に中等度不適感に對し、徐々に呼吸時呼吸困難に其の難易を見、者殆どりと推進する。

用法

飲食に於く、糖尿病患者は、食前療法と併用する事を要す。注射は食前十五分乃至三十分に於て毎日行ふ事に關じ、一日一回これを行ふものとす。

強度及用量

「フィゼリソ」の作用の程度は、强度を以て表示せらる。

該質は通常は糖尿病患者に於けるものにして、これを糖尿病患者に注射する時は、一單次の「フィゼリソ」によって於ける無効者は常に其の強度は、各人により異なれども、糖尿病者に於ては大凡三乃至四耳。重篤者に於ては大凡一耳内外ならう。

糖尿病患者に對しては通常各種類の茶葉の多量により持続するものとす。

非糖尿病性的疾患に於けるには通常さうな量を用ふるも、人により、又該病に就き者に本病の強度に於て以て抑らるる（トウカ病候）もなし注意しつゝ漸次増量を可とする。

何れの場合に於ても也糖尿病を強化起さるよう注意し、注射後過量の含水要素を補給すべし。

血糖缺乏症と其應急處置

(Hypoglycemia)

使用したる「フィゼリソ」に於て、自體の含水要素が不足なる時、血漿來して供給し、Hyperglycemiaを招來す。

其の強度は與く能力強度、尿酸強度又は尿酸強度を覺へて、於て發熱を來し、甚しき場合には眩暈、頭痛等を起し、更に進みては意識障害、精神障害を來し、又は昏迷に陥り、之を放置すれば生命に危險を致す危険いふ。

其に對する治療としては、漏出、含水要素を過量に與ふれば、數分にて恢復す。然もも有効なるは葡萄糖（即ち糖）は特に能はれず、伴薬（即ち強心、砂糖、キャンディー等）を経口的に採らしむるも可なり。

治療を起じたる場合には胰島素を買ふ（アコタ）にて興るか、又は二〇丸以上の酒精又は酔物を五乃至五〇丸の強度として漏出にて静脈内に注射す。又は子供強度アドリナリン液〇・三乃至〇・七mlを皮下注射す。但し成人の心臓強度の如きは胰島素等場合に限る。然れ共アドリナリンの作用は一時的なるを以て、患者が空腹で静脈に於て至らませば、直に胰島素はショックを觸ふべし。

右に胰島素之瓶に過量せる時は、漏後の「フィゼリソ」用液を適當に測定すべし。

使用上の心得

一、注射部位の場合はアコタを絶対避けてし。

二、注射部は必ずリードチタキスはアコトにて完全清潔の事。

三、注射は同一場所に反復せざること。

四、食事をぬく時は「フィゼリソ」注射を中止すべし。

五、注射等漏失の落葉に注意を要す。

A、新に漏出消滅したる注射器と注射針使用の事。

B、ゴム綱を除去せざる事。

C、リードチタキスはアコトにて漏出の上面を十分清潔の事。

D、注射針をアコトにて漏出に刺入し漏出して注射器にて吸取す。

注意

以上の基準を遵守すべし。然らざる時は、「フィゼリソ」不適用を禁じし。患者を細菌感染をして居る時あり。

貯藏

冷暗所に貯藏すること。

包装

一、機五〇丸（一〇丸）（販賣）
五〇丸（一〇丸）（二〇丸）（販賣）

市川市八幡二一五番地

製造販賣元 株式會社 東京藥化學研究所

東京市日本橋本町三丁目三番地

取扱店 株式會社 鳥居商店

Figure 6 - Literature on Fiselin

Translation of the Accompanying Literature

LANGELA

Insulin Extracted from Ocean Fishes "Insulin OKUNI"

This product is an aqueous solution of hormones extracted from the Islands of Langerhans of the pancreas of fish. It is a colorless and transparent solution with an acid reaction of pH = 3.

Its main action is decreasing the sugar content in blood. When 10 units are injected it has a sugar decreasing action of 30% to 80% and even after 3 injections its action is from 20% to 80%.

Besides a sugar decreasing action, it acts upon the vegetative nervous system especially stimulating the secondary sympathetic nerves. It stimulates gland secretions and increases perspiration, milk, gastric, pancreatic and digestive secretions.

Indications:

Treatment of shock and diabetes, malaria and dementia praecox.

Treatment of loss of weight in tuberculosis.

DOSAGE:

The dosage varies with the amount of sugar present in the patient's blood and urine and diet must be considered. One unit of this drug corresponds to about 2-5 Gm. of sugar in blood.

In the treatment of loss of weight in tuberculosis or to increase the appetite inject 2-5 units once daily and increase gradually. In case this drug is used with glucose solution inject one unit for every 3-4 Gm. of glucose solution.

DIRECTIONS:

Administration is mainly by subcutaneous injection; avoid intramuscular or intracutaneous injection. Do not repeat injection in the same area. Avoid contact of syringe and needle with all alkalies, wash with distilled or soft water and sterilize. Store this drug in a cool and dark place.

PACKAGE:

10 Units — 1 cc. — 5 ampoules
No. 681, 2-Chome, Shinkawa
Naniwa-Ku, Osaka

Manufacturer and Seller

Okuni Drug Co. Ltd.

Translation of the Accompanying Literature

ISZILIN "SHIMIZU"

(Pancreatic Hormone)

GENERAL: Iszilin is a sterile solution of insulin, extracted from the islands of Langerhans, and biologically standardized according to the International unit. The use of insulin has progressed rapidly, considering it was first used in 1922, but we must not forget the many physiological studies made on diabetics in the past 250 years.

PHYSIOLOGICAL ACTION: Iszilin is an insulin bearing preparation with the following properties:

- (1) To normalize blood sugar of a human diabetic or of a dog from which the pancreas has been removed.
- (2) Decrease blood sugar of a normal human.
- (3) Is responsible in diabetes mellitus for the reduction of blood sugar, metabolism of fat, change of carbohydrate to glycogen, increase of calcium and increase of phosphorus in blood and urine.
- (4) Resists increase of blood sugar due to an anesthetic, adrenalin, suffocation, treatment with pituitary body (either posterior or anterior).
- (5) Regulates change of glycogen to blood sugar.

CLINICAL APPLICATION:

Diabetes: Dietary care and hormone treatment in diabetes is dependent on symptoms and experience in treatment. The caloric need of a diabetic must be met. Diabetics must receive a decreased amount of carbohydrates, a regulated sugar intake, vitamins, minerals and albumen, 2-3 grams per kilogram of body weight for adults or 2-4 grams per kilogram of body weight for infants. After the diet is regulated, Iszelin should be used.

After a diabetes diagnosis, begin to use one unit of insulin per two or three grams of urinary sugar. This dose may be increased as required. It is generally administered hypodermatically, but must be given intravenously if diabetic coma with dyspnea is encountered. When insulin is used in dementia praecox, the patient is relaxed by the shock of very decreased blood sugar. This treatment has been widely used, but good results can only be expected if

treatment is begun early and the patient is receptive. Forty to two hundred units are given at once to cause insulin shock. Twenty to thirty such treatments may be required.

In loss of weight or to increase appetite, give one to five units per day. If necessary, cautiously increase the dose.

CAUTION: If insulin is given when the stomach is empty or to a person with idiosyncrasy toward insulin, the blood sugar may be reduced dangerously. In dementia praecox we attempt to do this, but in a normal diabetic this condition is not desired. Weakness, sedation, dizziness, laziness, abnormal excitement, a feeling of hunger or coma may result. In these conditions a 5% or 10% solution of glucose should be injected hypodermatically or intravenously. Glucose or sugars may be given orally also. The greater danger is low blood sugar.

DIRECTIONS: Inject hypodermatically, avoiding the same part. Repeated injections cause alteration of the tissue which prevents absorption of the insulin. Sterilize the syringe by boiling in soft water. Never use alkaline water.

PACKING:

5, 10, 50 Ampoules of 1 cc
1 cc = 10 I.U.

MANUFACTURED BY:

Shimizu Seiyaku Kogyo Co. Ltd.
#50, 2-Chome, Tsukiji-Cho,
Shimizu, Japan.

DISTRIBUTED BY:

Takeda Yakuhin Kogyo Co. Ltd.
#27, 2-Chome Doshu-Cho,
Higashi-Ku, Osaka.

Translation of the Accompanying Literature

Fischlin

FISCHLIN "NIKKEN"

GENERAL

FISCHLIN: Is a sterile aqueous solution containing insulin extracted and refined from the islands of Langerhans isolated from the pancreas of fish, Teleostei.

FISCHLIN UNIT: Rigid physiological tests are carried out and the potency of 1 cc. is indicated by international units.

Although the action of Fischlin in decreasing the sugar content in a diabetic depends upon the seriousness of the symptoms, one unit will assimilate one to six grams of carbohydrates.

DIRECTIONS AND DOSAGE: Inject subcutaneously or intravenously. It is useless giving orally because the digestive juices renders it ineffective. The dosage will vary according to the sugar content in the urine and blood. Dietary treatment must be considered. Inject once to three times a day, 15 to 20 minutes before meals.

USE IN NON-DIABETIC CASES: In the treatment of general loss of weight, especially loss of weight in tubercular cases, and to increase the appetite, the dosage is 2 to 5 units injected once or twice per day. After injection be sure to give plenty of carbohydrates.

If there are symptoms of mental derangement inject from 20 to 200 units until there are symptoms of a decrease in sugar content.

SYMPTOMS OF LOW SUGAR CONTENT: When excess Fischlin is injected or in cases of empty stomach or idiosyncrasies, it markedly reduces the sugar content. The first of these symptoms are asthenia, hunger, and exhaustion. This is followed by perspiration, dizziness and further by unconsciousness, excitement and coma. In such cases, if some sugar is given, there will be recovery in a few minutes. In cases of coma or if there is such a fear, give sugar solution with a stomach catheter or inject 5% - 20% dextrose solution subcutaneously or intravenously. When there is serious heart ailment, give some sugar after injection 0.3 to 0.7 cc of Epinephrine HCl solution, 0.1% subcutaneously.

CAUTION:

1. Inject subcutaneously and avoid intramuscular injection.
Do not repeat in the same area.
2. Always watch for symptoms of low sugar content.
3. In sterilizing syringes and needles always use distilled water or soft water that has been boiled and sterilized. If the water contains alkali it decreases the strength and at times will lose its effect.
4. To avoid contamination, remove the sterile solution as follows:

Do not touch the rubber cap.

Wipe the rubber cap with a 5% solution of carbolic acid, Tincture of iodine, or alcohol.

After absorbing an equivalent volume of air as the required volume of solution in the sterilized syringe, plunge the needle into the rubber cap. Turn the bottle upside down, force the air out and draw the solution.

STORAGE: Store in a dark cool place.

PACKAGE: 5 cc, each cc about 10 units.
5 cc, each cc about 20 units.
5 cc, each cc about 100 units.

MANUFACTURED AND SOLD BY:

Japan Scientific Research Laboratory.
No. 1608 Ukima-Machi
Oki-Ku, Tokyo

Postal Transfer Account No.
Tokyo 16954
Telephone - Akabane 2226

Translation of the Accompanying Literature

FISELIN

(Domestic Insulin From Fish)

GENERAL:

FISELIN: Is an aqueous solution of the active ingredients extracted from the islands of Langerhans of Teleostei fish. If injected into a diabetic it replenishes the deficiency of the function of the pancreas.

INDICATIONS: It is used mainly in diabetes but recently the scope of its use has gradually increased. It is also used in the treatment of diseases of the liver (jaudice, obstructions of the liver due to poisoning), loss of weight, malnutrition (emaciation), Basedow's disease, children's dysentery (cholera infantum), and digestive toxicity. Recently it has been recommended as having a marked effect as applied to mental science.

DIRECTIONS: Inject subcutaneously. Use dietary treatment at the same time. Inject once to 3 times a day according to requirements, 15 to 30 minutes before meals.

STRENGTH AND DOSAGE: The degree of action of Fiselin is indicated by units which correspond to standard international units. The sugar content decreased in the blood and urine by 1 unit of Fiselin will differ in individuals but in mild cases it is about 3-4 grams, and in serious cases about one gram.

In diabetics the dosage is increased or decreased depending on the sugar content in the blood or urine. In non-diabetic cases the average dose is 3 to 5 units but this depends on the individual. A exhausted person may be sensitive to this drug so the initial dosage should be small (1-2 units) and gradually be increased. In all cases after injection give appropriate amounts of carbohydrates.

SYMPTOMS OF LACK OF SUGAR AND ITS EMERGENCY MEASURES (HYPOGLYCEMIA):

When Fiselin is used and the amount of carbohydrate in the body is insufficient, the sugar in the blood decreases causing hypoglycemia.

The first symptoms are asthenia, hunger, shivering followed by fever, and in marked cases there is dizziness,

unconsciousness, excitement and coma. In such cases if sugar or carbohydrate is given the patient will recover in a few minutes. It is preferable to give orally dextrose, fructose, sugar, honey, syrup and orange juice.

In cases of coma give sugar with a stomach catheter or inject intravenously a 5%-50% solution of sugar, or subcutaneously 0.3-0.7 cc of Adrenalin Chloride (0.1%). However, adrenalin is limited to cases where there are no serious heart ailments. Since the action of adrenalin is momentary, if the patient is able to swallow, give sugar or syrup immediately.

If the symptoms of lack of sugar are sudden, decrease the dosage of Fiselin correspondingly.

INSTRUCTIONS:

1. In sterilizing syringes and needles avoid all alkali.
2. Thoroughly sterilize the area of injection with Tincture of Iodine or alcohol.
3. Do not repeat injections in the same area.
4. If one misses a meal do not use Fiselin.
5. Before injecting take the following precautions:
 - a. Sterilization of syringes and needles.
 - b. Do not remove rubber cap.
 - c. Thorough sterilization of the rubber cap with Tincture of Iodine or a 7% solution of carbolic acid.
 - d. Plunge the needle into the rubber cap, force the air out of the syringe and draw in the solution.

CAUTION: Follow the above instructions carefully. Otherwise the Fiselin may be contaminated and cause infection in the patient.

STORAGE: Store in a dark cool place.

PACKAGE: 5cc (10 units per cc).
5cc (20 units per cc).

MANUFACTURED AND SOLD BY:

Tokyo Pharmaceutical and Chemical Research
Laboratory.

No. 215 Yahata, Ichikawa

AGENT: Torii Company, Ltd.
No. 3, 3 Chome, Honmachi - Nihonbashi, Tokyo